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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/810,623

03/29/2004

William A. Blair

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11/17/2008

SEED INTELLECTUAL PROPERTY LAW GROUP PLLC

701 FIFTH AVE

SUITE 5400

SEATTLE, WA 98104

EXAMINER

SYED, NABIL H

ART UNIT

PAPER NUMBER

2612

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/810,623 | Applicant(s) BLAIR ET AL. | |
| | Examiner NABIL H. SYED | Art Unit 2612 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 40-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/15/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a non-final office action on merits in response to the RCE filed 9/15/08. Amendments received on 9/15/08 have been entered. Claims 62-64 are newly added claims. Accordingly claims 40-64 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 40, 44-46, 50-54, 58, 60-62, are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562).

As of claims 40, 44, 45, 52, 53, 61 and 62, Blair discloses an apparatus adapted to detect an object in a work area, the object having a tag element affixed thereto (see abstract), the apparatus comprising:

a first electronic circuit coupled to a transmit/receive antenna and adapted to emit a wideband interrogation signal (Blair discloses that a detector device (see fig. 10) is used to excite the tag with signals over a wide bandwidth, hence comprising a first electronic circuit; see col. 5, lines 65-67; also see fig. 3), the wideband interrogation signal having a plurality of pulses adapted to additively build energy in said tag element to enable tag element to generate at least one un-modulated return signal that is an image of a

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resonance decay of additively built energy of said tag element (Blair discloses that the pulsed transmissions allow the system to pump more energy into the tag through several pulses, and the tag when excited transmits an image signal of its resonance decay, via magnetic coupling back to the detection wand which contains a receiver circuit (see col. 6, lines 3-10). Blair further discloses that the tag transmit a narrow return signal (un-modulated return signal), Blair also discloses that the tuned transmitter of the interrogator builds additive energy into the tag (see col. 6, lines 53-55); and a second electronic circuit coupled to transmit/receive antenna and adapted to determine whether tag element is present in said work area and to discriminate at least one return signal from noise, based on a magnitude of resonance decay that commences after turn-off of at least one of pulses (Blair discloses that the receiver is also wideband whereby it can see tags over a wide spectrum benefiting from fast transmitter signal decay; see col. 6, lines 56-58. Blair further discloses that the system uses a half duplex system, so transmitter transmits a signal and after the transmission of the pulse is finished the detection wand is switched to the receiving mode; see col. 7, lines 12-24; also see col. 5, lines 1-20).

However Blair fails to disclose that interrogation transmits a varying interrogation signal.

Rubin discloses a electronic article security system wherein when interrogation (via transmission system 10) transmits an interrogation signal the frequency of the alternating electric signal varies in accordance with a numerical frequency control

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signal; see col. 2, lines 66 through col. 3, line1). Rubin further discloses that the frequency can be varied arbitrarily such as pseudo randomly (see col. 2, lines 53-58).

From the teaching of Rubin it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Blair to include a interrogator which transmits a varying interrogation signal as taught by Rubin in order to generate a wide variety of accurately controlled frequency patterns and with potential improvement in the probability of detection of the tags.

As of claims 46 and 54, Blair discloses that at least one return signal includes a relatively narrowband return signal centered about a specific, but not predetermined frequency (see col. 11, lines 3-10).

As of claims 50 and 58, Blair discloses that second electronic circuit includes a digital signal processor (DSP) adapted to filter at least one return signal from noise (via DSP 62; see fig. 6 and 3; also see col. 6, lines 64-67).

As of claims 51 and 60, Blair discloses that first and second electronic circuits and said transmit/receive antenna are part of a hand-held scanning device adapted to detect said object having said tag element affixed thereto in said work area, including a surgical area internal to a patient (see col. 5, lines 43-54).

4. Claims 41, 47 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562) and further in view of Pauly et al. (6,349,234).

As of claims 41, 47 and 55, Blair discloses all the limitation of the claimed invention as mentioned in claims 44 and 52 above but fails to explicitly disclose that interrogator transmits a pulse-width interrogation signal.

Pauly discloses a tag (via pacer 106) and an interrogator (via programmer 110) (see fig. 1). Pauly discloses that various communications technique such as pulse-width modulation (PWM), frequency shift keying (FSK) or other suitable techniques can be used (see fig. 2 and fig. 3; also see col. 6, lines 31-45)

From the teaching of Pauly it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the interrogator of Blair to include the function of producing pulse width modulation signal as taught by Pauly since pulse width modulation is a common technique to convey information over a communications channel.

5. Claims 42, 48 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562) and further in view of Lewiner et al. (4,893,118).

As of claims 42, 48 and 56, Blair discloses all the limitation of the claimed invention as mentioned in claims 44 and 52 above but fails to explicitly disclose that interrogator transmits a voltage varying interrogation signal.

Lewiner discloses an interrogator, which produces a voltage-modulated signal (see claim 1).

From the teaching of Lewiner it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the interrogator of Blair to

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include the function of producing a voltage modulated signal as taught by Lewiner since it is well known in the art that the interrogators are used to transmit an energy signal to power the passive tags.

6. Claims 43, 49 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562) and further in view of Chung (6,696,954).

As of claims 43, 49 and 57, the combination of Blair and Rubin discloses all the limitation of the claimed invention, Blair further discloses that the detection device is a movable wand with an interrogation ring but fails to explicitly disclose that transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit and interrogation signal in round-robin succession in respective coordinate directions and each adapted to receive at least one return signal, wherein transmit and receive cycles of each ring are clocked as to avoid overlap with transmit and receive cycles of others rings.

Chung discloses a detection arrangement for detecting a wireless article associated with an object within a detection region comprising: a first loop antenna having a loop conductor in the X-Y plane, a second loop antenna having a loop conductor in substantially in a plane rotated about the X direction to be at an angle with respect to the X-Y plane, a third loop antenna having a loop conductor substantially in a plane rotated about the Y direction to be at an angle with respect to the X-Y plane, and each antenna is adapted to transmit and receive signals and having a processor which process transmitted and received electrical signals hence clocking the received

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and transmitted signal to avoid overlap (see fig. 2, antenna 30; also see col. 4, lines 19-35; and col. 17, lines 58 through col. 18, lines 40).

From the teaching of Chung it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Blair and Rubin to include a multi directional antenna as taught by Chung in order to enhance the detection process of the tags because multiple carrier signals can be transmitted using a multiple directional antenna.

7. Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562) and further in view Hossack et al. (5,928,151).

As of claim 59, the combination of Blair and Rubin discloses all the limitation of the claimed invention as mentioned in claim 52 above but fails to explicitly disclose that the second electronic circuit (inside the interrogator) includes a Bessel low pass filter.

Hossack discloses that an interrogator (via transmit beamformer 40; see fig. 1) can include a low pass filter, such as a Bessel filter 58 (see fig. 2).

From the teaching of Hossack it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Blair and Rubin to include a Bessel filter in the interrogator as taught by Hossack in order to preserve the wave shape of filtered signals in the passband.

8. Claims 63 and 64, are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair (6,026,818) in view of Rubin (6,359,562) and further in view of Nysen (6,633,226).

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As of claims, 63 and 64, the combination of Blair and Rubin discloses all the limitations of the claimed invention as mentioned in claims 40 and 62 above, but fails to explicitly disclose that the frequency is randomly varied by alteration of a time interval between successive drive pulses and interrogation signal is varied so as to increase a signal to noise ration.

Nysen discloses a frequency hopping spread spectrum system for interrogating a passive transponder (see abstract). Nysen discloses that the frequency of the interrogation signal is randomly varied (see col. 11, lines 18-20; also see col. 15, lines 25-39). Nysen further discloses that the interrogation signal is pulsatile, having between 25%-50% duty cycle. For example, with a frequency hopping period of 15 micro seconds, the system generates an interrogation pulse for 7.5 micro second, is silent for 300 ns and then listen for 4 micro second for return signal and then silent for 3.5 micro second, hence altering the time interval between drive pulses (see col. 12, lines 9-22). Nysen further discloses that by sweeping the frequency between different values the interrogation system provides higher signal to noise ratio (see col. 3, lines 28-40; also see col. 4, lines 9-14). Further note, that in a communication system it is well know that, varying the frequency between different values will increase signal to noise ration, because vary frequency will reduce, random noise, fixed frequency interference from neay by sources.

From the teaching of Nysen it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Blair and Rubin to include the step vary the interrogation signal by altering time as taught by

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Nysen in order to eliminate echo from near filed sources and other interrogation systems.

Response to Arguments

9. Applicant's arguments, see Remarks, filed 9/15/08, with respect to 35 U.S.C 112 first paragraph rejection have been fully considered and are persuasive. The 35 U.S .C 112 rejection of claim 40 has been withdrawn.

10. Applicant's arguments filed 9/15/08 have been fully considered but they are not persuasive.

As per applicant arguments, "that there is no motivation or suggestion to make the proposed modification, and/or the proposed modification would change the principle of operation of Blair and so the teachings of the references are not sufficient to render claim 40 prima facie obvious." The Examiner respectfully disagrees. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, the reference of Blair discloses that a detector device (see fig. 10) is used to excite the tag with signals over a wide bandwidth (see col. 5, lines 65-67; also see fig. 3). The Examiner is using the reference of Rubin to teach that an interrogator can **sweep (vary)** through multiple frequencies in order to detect tags. Rubin discloses

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that the frequency of the interrogator can be swept between a low and high frequency (see col. 2, lines 53-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Blair, to include the step of varying the wideband interrogation signal, since Blair discloses that the signal emitting detection device comprises pulsed signal emitting means which cover a signal range which include that of the tag. So in Blair, when the detection device has to cover a signal range, it will be advantageous to vary the interpretation signal at different frequencies in order to interrogate multiple tags with multiple resonant frequencies.

As of the amended claims 43, 49 and 57, applicant argues that, “the Chung’s antennas are not arranged on a wand as required by claims 43, 49 and 57.” The claims 43, 49 and 57 are rejected based on the reference of Blair and Chung (see rejection claims 43, above). Blair discloses that the detection device is a movable wand with an interrogation ring (see col. 5=4, lines 30-35). Chung discloses that an interrogator antenna includes three mutually orthogonal rings (see fig. 2, antenna 30; also see col. 4, lines 19-35; and col. 17, lines 58 through col. 18, lines 40). So it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Blair’s wand antenna to include multiple rings so the tags can be detected by the interrogator in multiple direction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NABIL H. SYED whose telephone number is (571)270-3028. The examiner can normally be reached on M-F 7:30-5:00 alt Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman can be reached on (571)272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nabil H Syed
Examiner
Art Unit 2612

N.S

/Brian A Zimmerman/
Supervisory Patent Examiner, Art Unit 2612